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January 15, 2015

Colonel Tom D. Miller
Base Commander
377 ABW/CC
2000 Wyoming Blvd. SE
Kirtland AFB, NM 87117-5606

John Pike
Director, Environmental Management Services
377 MSG
2050 Wyoming Blvd. SE, Suite 116
Kirtland AFB, NM 87117-5270

**RE: NOTICE OF VIOLATION
INTERIM GROUNDWATER EXTRACTION AND ADDITIONAL
CHARACTERIZATION
BULK FUELS FACILITY SPILL
SOLID WASTE MANAGEMENT UNITS ST-106 AND SS-111
KIRTLAND AIR FORCE BASE
EPA ID# NM9570024423, HWB-KAFB-14-MISC**

Dear Colonel Miller and Mr. Pike:

On August 21, 2013, the United States Air Force ("USAF" or "Permittee") and the New Mexico Environment Department ("NMED") presented a plan for the implementation of certain interim measures at the Albuquerque-Bernalillo County Water Utility Authority Governing Board Meeting. In accord with the Kirtland Air Force Base ("Base") Hazardous Waste Treatment Facility Operating Permit No. NM9570024423 ("Permit") and the New Mexico Hazardous Waste Act, NMSA 1978, Sections 74-4-1 to 74-4-14 ("the Act"), NMED required the implementation of interim measures to reduce and prevent migration of hazardous wastes and hazardous waste constituents from the Bulk Fuels Facility Spill at the Base while long-term corrective action remedies are evaluated. *See* Permit Sections 6.0 and 6.2.2.2.12.1. The interim measures were necessary based on the extent of the fuel spill, its location and the amount of time needed to establish and implement corrective measures under the Resource Conservation and Recovery Act ("RCRA"). The third interim measure, also referred to as Task 3, was to address the Ethylene Dibromide ("EDB") and be implemented by December 31, 2014.

In a letter dated April 24, 2014, NMED reiterated expectations for interim measure deadlines, including the deadline for the EDB interim measure: "Ethylene Dibromide (EDB) (design and implement interim treatment of dissolved phase EDB that has migrated off site north of the Base, end of 4th Q, 2014)."

On April 8, 2014, NMED received a "white paper" proposing an approach to Task 3 which involved increasing the pumping rate of Kirtland Well #3, a public drinking water supply well, in order to draw the EDB contamination into this well for removal by carbon treatment. By a letter dated June 6, 2014, NMED reiterated its position, previously communicated in a meeting on May 7, 2014, that any proposal to intentionally induce migration of EDB through an extensive volume of non-contaminated groundwater was not acceptable. NMED noted that time spent on consideration of this concept threatened compliance with the December 31, 2014 deadline for the EDB interim measure. Also, NMED required the submission of a work plan for the EDB plume by June 30, 2014.

On June 26, 2014, USAF requested an extension of the June 30 deadline until July 30, 2014. In a letter dated July 10, 2014, following a presentation by KAFB on June 18, 2014, NMED granted an extension to August 1, 2014, for submission of the EDB work plan. NMED imposed certain requirements for submission of the EDB work plan.

On August 1, 2014, NMED received the EDB work plan from USAF. By letter of August 20, 2014, NMED approved the work plan, imposed certain conditions on the performance of the plan, and reiterated that the December 31, 2014 deadline for design and implementation of the EDB interim measure remained in effect. Upon approval of the work plan, it became an enforceable condition of the Permit. *See Permit Section 6.2.2.2.12.3.*

As of the date of this letter, the Permittee has failed to implement the EDB interim measure as described in the August 1, 2014 work plan. The Permittee is therefore in violation of the Permit and the Act. In accord with the NMED Hazardous Waste Civil Penalty Policy ("Policy"), the Permittee is subject to a civil penalty of \$10,000 plus an additional \$5,000 for each day this violation continues, subject to upward or downward adjustment in accordance with the Policy.

Further, NMED is aware that USAF has been developing an approach to address the EDB interim measure that significantly expands upon the August 1, 2014 work plan. Specifically, at a September 17, 2014 meeting of the Albuquerque-Bernalillo County Water Utility Authority Governing Board, Mr. Mark Correll, Deputy Assistant Secretary of the Air Force for Environment, Safety and Infrastructure, presented several potential courses of action that would provide a more robust interim measure for the dissolved phase EDB. Each option involved the installation of up to seven additional extraction wells, with the difference being the timing of the installation. When implemented, this approach would result in the operation of eight extraction wells, rather than one extraction well as provided in the August 1, 2014 work plan. As has been previously communicated to USAF, NMED supports in principle the concept of expanding upon the August 1, 2014 work plan; however, USAF's announced intention to pursue such expansion does not negate its liability for the failure to comply with the existing December 31, 2014 deadline for implementation of the approved EDB interim measure work plan.

NMED is aware that external factors (difficulty in obtaining landowner permission and discovery of abandoned munitions) have already delayed progress in achieving the expansion milestones as proposed at the September 17, 2014 meeting. Also, the expansion of the August 1, 2014 work plan has not been formally reviewed and approved by NMED.

Therefore, within 45 days of the date of this Notice of Violation, the Permittee shall submit a proposed plan to collapse the dissolved phase EDB contamination plume. The *EDB Interim Measure Implementation Plan* shall include the following elements:

1. A schedule for completion of all actions in the August 1, 2014 Groundwater Extraction Pilot Implementation and Additional Plume Characterization Work Plan, and October 9, 2014 Work Plan Addendum, as previously approved by NMED. See Attachment A for additional details regarding this schedule.
2. An aquifer pilot test work plan for the hydraulic testing of extraction well 106228. The aquifer pilot test work must be prepared in accordance with the EPA "Suggested Operating Procedures for Aquifer Pumping Tests," <http://www.epa.gov/superfund/remedytech/tsp/download/sopaqu.pdf>, or other procedures approved by NMED. The aquifer pilot test work plan must include a detailed description of the proposed aquifer testing that includes a step-drawdown test and a constant discharge test and all related activities including, but not limited to, analytical testing, a description of equipment and all methods and procedures for conducting the test and analyzing the acquired data.
3. A description of all other actions and milestones necessary to collapse the dissolved phase EDB plume. This description shall include commitments to submit, at the appropriate time in the future, technical work plans and completion reports for the following activities:
 - a. Additional aquifer performance testing;
 - b. Aquifer test reports for extraction well 106228 and other tested wells;
 - c. Computer modeling of groundwater flow paths, travel times and extraction well capture zones as necessary to locate and design additional extraction wells;
 - d. Drilling and construction of additional monitoring wells, if necessary, to define the horizontal and vertical extent of EDB contamination;
 - e. Drilling and construction of additional monitoring wells, if necessary, to conduct aquifer performance testing;
 - f. Drilling and construction of up to seven additional extraction wells, anticipated to include three wells in 2015 and four wells in 2016;
 - g. Modifications, if necessary, to the collection, treatment and disposal system for extraction water; and
 - h. Modifications to the quarterly groundwater monitoring program, if necessary, to monitor the effectiveness of the interim measure and to ensure that the interim measure will not cause EDB to migrate into a drinking water supply well.

The EDB Interim Measure Implementation Plan and all other work plans, schedules and completion reports required by this Notice of Violation shall be subject to NMED review and approval.

The violations addressed by this Notice of Violation shall be deemed to cease upon written notification by NMED that the Permittee has successfully completed all actions in the August 1, 2014 Groundwater Extraction Pilot Implementation and Additional Plume Characterization Work Plan, and October 9, 2014 Work Plan Addendum. NMED reserves the right to require additional monitoring wells or extraction wells in addition to those discussed above, if necessary,

to stabilize and collapse the dissolved phase EDB plume while final comprehensive corrective action measures are selected.

Finally, while NMED is disappointed with USAF's inability to meet the mutually agreed upon deadline for implementing a plan to attack the dissolved phase EDB, we remain supportive of USAF's expanded EDB treatment plan outlined last September and will consider abating a portion of the penalties if USAF is able to begin treating contaminated groundwater by the end of June. Ultimately, while plans are an important part of the process, NMED will not be satisfied until USAF begins treating the contaminated groundwater. Please contact Katie Roberts of my staff at (505) 827-2855 if you have any questions regarding this Notice of Violation.

Yours truly,



Ryan Flynn
Cabinet Secretary
New Mexico Environment Department

Cc: Dep. Sec. B. Tongate, NMED
K. Roberts, NMED
A. Bodour, AFCEC
Col. T. Haught, KAFB
D. Wilson, KAFB
L. Bitner, USAF
B. Gallegos, AEHD
F. Shean, ABCWUA
L. King, EPA-Region 6 (6PD-N)

ATTACHMENT A
REQUIREMENTS FOR SCHEDULE OF COMPLETION OF AUGUST 1, 2014 WORK PLAN

The Permittee shall submit daily drilling summary reports to NMED by email for each day that drilling and well installation operations are active. The daily email reports shall summarize the activities for that day, and shall summarize the activities expected to be performed on the following work day. The daily email reports shall include a copy of the handwritten lithologic log, prepared by the Permittee's site geologist, of earth materials encountered for each day that the drill hole advances. The occurrence of worker injuries or safety shutdowns, if any, also shall be noted in the daily email reports.

The schedule shall include anticipated dates for the installation of all monitoring wells specified in the work plan. Installation is considered to be complete once the well casing has been installed to its final position and the casing rim can be measured relative to the ground surface. Development of each well must be completed within 21 days of the completion of well installation.